LIMITED-ANGLE FREQUENCY-DISTANCE RESOLUTION RECOVERY IN NUCLEAR MEDICINE IMAGING

Abstract of the Disclosure

A nuclear camera (10) includes a plurality of detector heads (12) which have collimators (14) for fixing the trajectory along which radiation is receivable. A rotating gantry (22) rotates the detector heads around the subject collecting less than 360° of data, e.g., 204° of data. A zero-filling processor (50) generates zero-filled projection views such that the actually collected projection views and the zero-filled projection views span 360°. A smoothing processor (56) smooths an interface between the zero-filled and actually collected projection views. The zero-filled and smoothed views are Fourier transformed (60) into frequency space, filtered with a stationary deconvolution function (62), and Fourier transformed (64) back into real space. The resolution recovered projection data sets in real space are reconstructed by a reconstruction processor (68) into a three-dimensional image representation for storage in an image memory (70).